AMENDMENTS TO THE CLAIMS

Please amend claims 1-6 and 8, cancel claim 7 and enter new claims 9-15 as follows:

Claim 1 (Currently Amended)

An architecture for Converged Broadband Wireless Communications said system comprising ~~CHARACTERIZED BY~~:

~~(1)~~ A converged wireless terminal including ~~comprising~~:

a) a block radio-frequency and intermediate-frequency and digital broadband transceiver for converting between the base-band signal and the radio frequency, ~~and~~

b) a block base-band signal and control signal processing engine for processing different ~~various~~ wireless algorithms and protocols, ~~and~~

c) a Common Air Interface Basic Input/Output System (CAI-BIOS) for the mapping and controlling of different open wireless air-interfaces ~~(wireless standards)~~ to ~~the~~ said broadband transceiver and ~~the~~ said processing engine, ~~and~~

d) a SIM (Smart Integrated Memory) card or Memory Card ~~Stick~~ for the loading of ~~different~~ said open air interfaces and their open software modules to ~~the~~ said CAI-BIOS,

~~(2)~~ A Common Access Point (CAP) including ~~comprising~~:

a) a block radio-frequency and smart antennas and broadband transceiver for converting between the base-band signal and the radio frequency, ~~and~~

b) a block base-band signal and control signal processing engine for processing different ~~various~~ wireless algorithms and protocols, ~~and~~

c) a Common Air Interface Basic Input/Output System (CAI-BIOS) for the mapping and controlling of different open wireless air-interfaces ~~(wireless standards)~~ to ~~the~~ said broadband transceiver and ~~the~~ said processing engine, ~~and~~

d) a group of open software modules providing said open ~~various~~ air interfaces ~~(wireless standards)~~ to ~~the~~ said CAI-BIOS, ~~and~~

e) a block network interface unit for connecting to the backbone wireline networks,[.]

~~(3)~~ An All-IP (Internet Protocol) Packet Division Multiplex (PDM) backbone or core network including ~~comprising~~:

a) Conventional PDM network, and ~~or~~

b) Public or private PDM network.

Claim 2 (Currently Amended)

The architecture for Converged Broadband Wireless Communications of claim 1 wherein: said Common Access Point and said converged wireless terminal further comprising:

a) said Common Access Point supporting[s] ~~various~~ open network interfaces ~~(for example,~~ including Fiber Optic, ATM (autonomous transfer mode), Ethernet, Digital Subscriber Line, Cable, ~~etc)~~ to ~~the~~ said PDM backbone network through wireline link, [;]

b) said Common Access Point supporting[s] ~~various~~ open air interfaces ~~(for example,~~ including GSM (Global System for Mobile Communication)/GPRS (General Packet Radio Service), [W-]CDMA (~~Wideband~~ Code Division Multiple Access), UMTS (Universal Mobile Telecommunications Service), OFDM (Orthogonal Frequency Division Multiplex), IEEE 802.11, 802.15, 802.16 standards and Wireless Local Loop, ~~etc)~~ to ~~the~~ said converged wireless terminal based on said CAI-BIOS architecture ~~through wireless air link~~ , and [;]

c) said converged wireless terminal supporting[s] said open air interfaces to ~~the~~ said common access point based on said CAI-BIOS architecture ~~through wireless air link~~.

Claim 3 (Currently Amended)

The architecture for Converged Broadband Wireless Communications of claim 1 wherein: said Common Access Point and said converged wireless terminal further comprising:

a) said converged wireless terminal and said common access point being ~~are all~~ open modules and ~~function units and can be~~ reconfigurable, programmable and software definable,[;]

b) said converged wireless terminal and said common access point ~~can~~ automatically or manually ~~run in any of the~~ operative in said open air interfaces based on said CAI-BIOS architecture subject to the service availability, and[;]

c) said common access point ~~can~~ automatically or manually ~~run in any of the~~ operative in said open network interfaces subject to the service availability.

Claim 4 (Currently Amended)

The architecture for Converged Broadband Wireless Communications of claim 1 wherein: said converged wireless terminal and said common access point ~~are~~ communicate~~ing~~ through All-IP end-to-end direct signaling and protocol,[;]
~~said converged wireless terminal and said common access point~~ and support integrated services of voice, data and video over said All-IP protocol and signaling through said open air interfaces.

Claim 5 (Currently Amended)

The architecture for Converged Broadband Wireless Communications of claim 1 wherein: said CAI-BIOS utilizes ~~performs~~ the mapping and controlling between said open ~~different~~ air interfaces and ~~the~~ said open base-band/control processing engine, ~~the~~ said broadband transceiver as well as ~~the~~ said radio frequency unit of ~~the~~ said converged wireless terminal and ~~the~~ said common access point,[;] ~~said CAI-BIOS is the key unit of the said converged wireless terminal and the said common access point; said CAI-BIOS~~ and generates ~~provides~~ open interface parameters (OIP) ~~information on~~ of said open air interfaces including ~~necessary~~ transmission parameters, modulation parameters, channel parameters, access control parameters, dynamic bandwidth allocation parameters and open spectrum management ~~other specific air interface~~ parameters.

Claim 6 (Currently Amended)

The architecture for Converged Broadband Wireless Communications of claim 1[2] wherein: said open software modules ~~that~~ providing[e] said open air interfaces to said CAI-BIOS in said common access point can be stored in said common access point disks or uploaded from ~~the~~ said PDM backbone networks or uploaded from other remote networks[;] and said open software modules ~~that~~ providing[e] said open air interfaces to said CAI-BIOS in said converged wireless terminal can be loaded in said SIM card or said memory card ~~stick~~.

Claim 7 (Cancelled)

Claim 8 (Currently Amended)

A sample phone ~~product~~ of the converged broadband wireless terminal said system comprising ~~CHARACTERIZED BY~~:

a) open Air Interfaces Options (automatically or manually) based on CAI-BIOS (Common Air Interface Basic Input/Output System) architecture, ~~and~~

b) Security (finger print and digital rights management, ~~etc~~), ~~and~~

c) Information recognition (voice recognition[,] and pattern recognition, ~~etc~~) ,

d) Bandwidth on Demand (Quality of Service Centric) ,

e) SIM card or memory card ~~stick~~ containing said open air interfaces of said CAI-BIOS architecture .

Claim 9 (New)

A system as recited in claim 1 wherein said converged wireless terminal comprises system software, application software and operating system software upon the system hardware through said CAI-BIOS.

Claim 10 (New)

A system as recited in claim 1 wherein said processing engine decodes, de-channelizes and demodulates said base-band signal and control signal of said open air interfaces into detailed digital signaling, traffic and control information based on said CAI-BIOS architecture.

Claim 11 (New)

A system as recited in claim 1 wherein said common access point can be reconfigured and re-programmed as wireless router, mobile soft switch or wireless gateway of said open air interfaces.

Claim 12 (New)

A method as recited in claim 2 detecting said open air interfaces for said Common Access Point and said converged wireless terminal, said method comprising:

a) Performing initial channel processing from the received signals,
b) Scanning frequency carrier from the received signals,
c) Performing different decoding scheme from the received signals,
d) Performing different demodulation scheme from the received signals, and
e) Calculating radio link parameters and models.

Claim 13 (New)

A system as recited in claim 1 wherein said CAI-BIOS further defines the basic interface structure for said open air interfaces, said open air interfaces switching, said open software modules as well as switching between internal and external open modules of said open air interfaces.

Claim 14 (New)

A system as recited in claim 8 wherein said sample phone further comprising:

a) System hardware and peripherals including displayer, digital camera, sensors, health detector, global position system (GPS) receiver and memory card,
b) Software detecting available wireless networks of said open air interfaces in the service geographic area,
c) Software configuring the detected said wireless networks and installing the required modules of said open air interfaces,
d) Software providing the information input methods for said sample phone,
e) Software providing enhanced security solutions for said sample phone,
f) Software providing connection methods for said sample phone including traditional mobile networks, ad-hoc, broadcasting or user-defined topology,
g) Software defining user-preferred service mode based on quality-of-service, bandwidth, traffic model, billing model and application model,
h) Software providing safety solutions for said sample phone,
i) Software supporting open spectrum management methods including spectrum sharing, spectrum recycling and multiple spectrum ownership,

j) Software providing optimized power management solutions to minimize said sample phone power consumption including base-band processing, radio frequency modules, controllers as well as applications, and

k) Software supporting Voice-over-IP capability for said sample phone.

Claim 15 (New)

A convergence layer architecture for Converged Broadband Wireless Communications said system comprising:

a) Open convergence of wireless architecture and computer architecture based on said CAI-BIOS and PC BIOS (personal computer basic input/output system),

b) Open service convergence including service-oriented mobility infrastructure across both wireline and wireless networks,

c) Open transport convergence including All-IP end-to-end convergence and IP enterprise convergence,

d) Open transmission convergence including adaptive modulation, adaptive coding and adaptive equalization of said open air interfaces based on said CAI-BIOS.